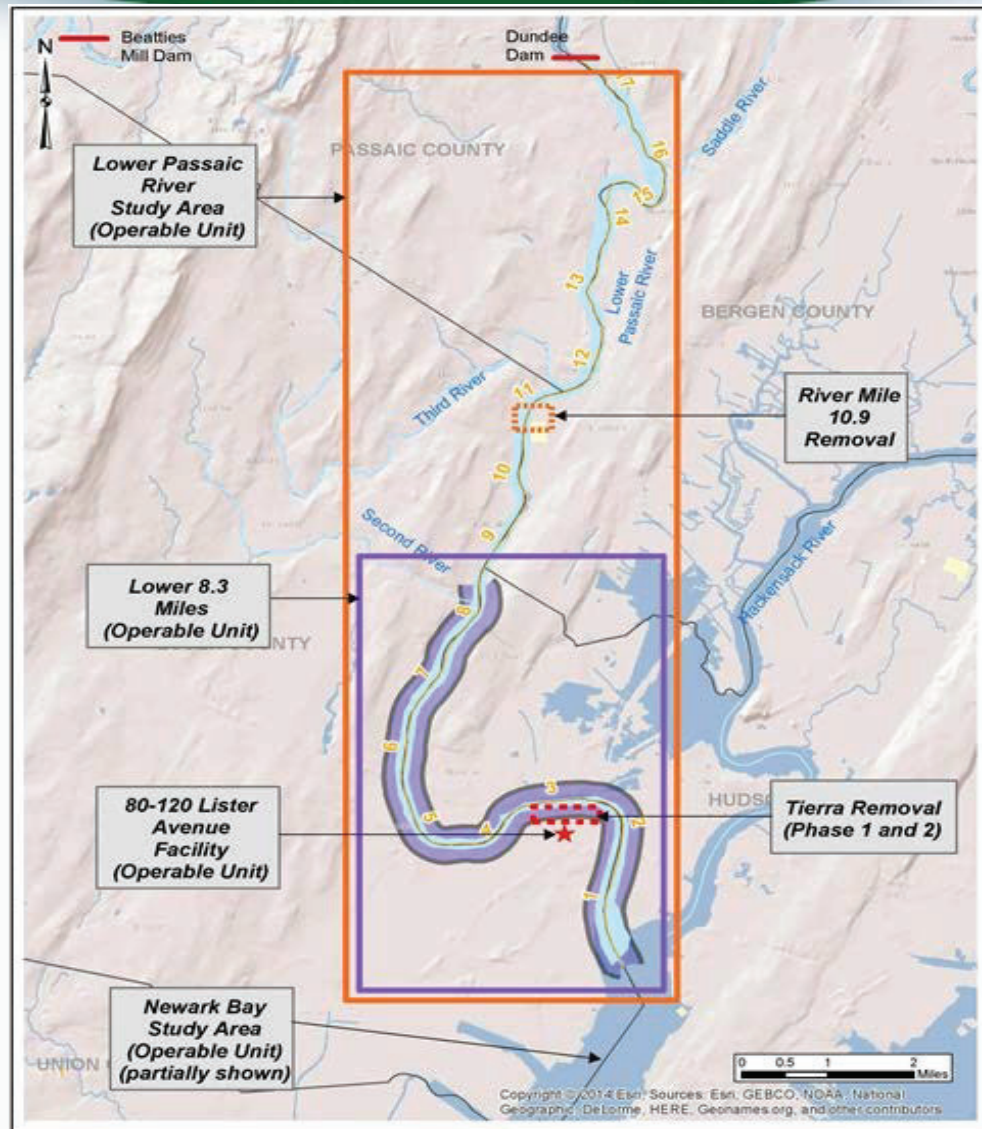




# 17-Mile Lower Passaic River Study Area Presentation

October 21, 2019

U.S. Environmental Protection Agency - Region 2  
Superfund and Emergency Management Division  
Passaic, Hackensack and Newark Bay Remediation Branch



## Diamond Alkali Superfund Site Overview:

- 80-120 Lister Avenue (Operable Unit 1)
- Lower 8.3 miles of the Lower Passaic River (Operable Unit 2)
- Newark Bay Study Area (Operable Unit 3)
- 17-Mile Lower Passaic River Study Area (LPRSA) (Operable Unit 4)



## Diamond Alkali Superfund Site History

**1984:** EPA lists Diamond Alkali Site as a National Priorities List (Superfund) Site

**1987:** Interim Record of Decision for containment remedy including the following at 80-120 Lister Avenue facility:

- capping,
- subsurface slurry walls, and
- a groundwater collection and treatment system



**Mid-1980s:** Occidental, under agreement with the State of NJ, determined that dioxin was in the river adjacent to their facility



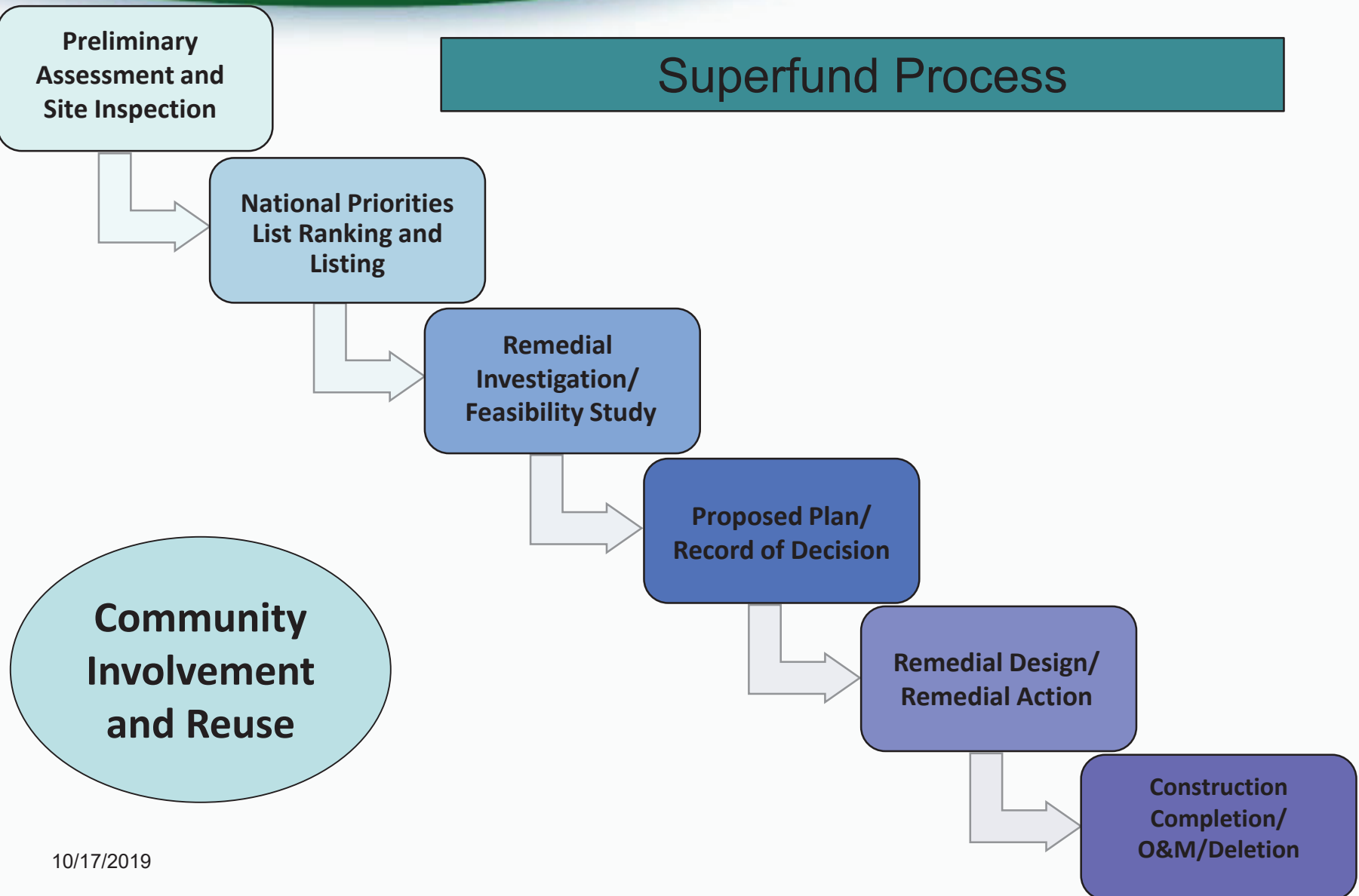
**1994:** Occidental and EPA signed an agreement to investigate the river



**By 2002:** EPA expanded the investigation to the 17-mile tidal portion of the river



## Superfund Process





## **Lower 8.3 Miles Update**

**Alice Yeh, Remedial Project Manager**



## Status of the Lower 8.3-Mile Cleanup

- **Record of Decision: March 2016**
  - Engineered cap, bank-to-bank, over lower 8.3 miles
  - Before cap is placed, dredge 3.5 million cubic yards of contaminated sediment
  - Dredged sediment dewatered locally and transported off-site for disposal
  - Estimated cost of cleanup: \$1.4 billion
- **Legal Agreement for Design (Occidental): September 2016**
- **Design: 2016-2020**
  - Pre-Design Investigation: 2016-2019
  - Design Documents: 2019-2021
- **Negotiate Legal Agreements for Cleanup (~ 100 parties): 2016-2021**
- **Cleanup: Beginning in 2021, lasting approximately 6 years**





# **17-Mile LPRSA Update**

**Diane Salkie, Remedial Project Manager**



## Timeline for Site Investigations

**2004 to 2007:** EPA RI/FS  
sampling of 17-miles

**2007:** Cooperating Parties Group  
agrees to take over 17-Mile RI/FS,  
with EPA & NJDEP Oversight

**2008 to 2014:** CPG conducts  
RI sampling

**2014 to now:** data evaluations,  
analysis, report approval

### RI Field Investigations Included:

- Bathymetry Surveys
- Water Column  
Sampling
- Sediment Sampling
- Biological Sampling



## Who Is the CPG?

The Lower Passaic Cooperating Parties Group (CPG) currently comprises 41 entities working together on several actions within the Lower Passaic River 17-mile study area.

- 2004: CPG was formed.
- 2007: CPG took over the implementation of the 17-mile RI/FS under EPA and NJDEP oversight.
- 2013: CPG began an early removal action at River Mile 10.9 in Lyndhurst, completed in 2014
- 2017-18: CPG, under EPA oversight, identified the potential for an Interim Remedy for the Upper 9 Miles of the Lower Passaic River that would control sources of sediment contamination.
- 2018-19: CPG, EPA and NJDEP are working cooperatively to complete a Feasibility Study by the end of this year that will evaluate alternatives for a possible Interim Remedy to control sources
- 2019: CPG completed the RI of the 17-mile study area and received conditional approval from the EPA.



## **Remedial Investigation Field Investigations Included:**

- Bathymetry Surveying – Depth of water over time that shows where sediment is likely to erode and deposit
- Water Column Sampling
- Sediment Sampling
- Biological Sampling









-  Subreach Boundary
-  Navigational Channel
-  Shoreline

Figure 1 shows a color scale for the difference in the number of species between the two regions. The scale ranges from  $<-5$  (red) to  $>5$  (dark blue). The intermediate values are  $-5$  (orange),  $-2$  (yellow),  $-1$  (light yellow),  $0.5$  (light green),  $1$  (light blue),  $2$  (medium blue), and  $>5$  (dark blue).



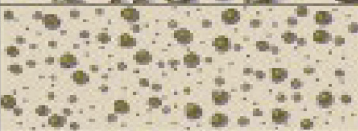




-  Depositional from 2007 to 2012
-  No Change / Temporarily Depositional
-  Erosion and Deposition
-  Erosional from 2007 to 2012
-  > 1.5 feet of Erosion

Positive bathymetry change indicates deposition denoted in blue.  
Negative numbers indicate erosion denoted in red.  
Shoal bathymetry derived from single beam data for 2007, 2011 and 2012.

Source: LPRSA Draft RI Report, 12/17 (Anchor QEA, in preparation)

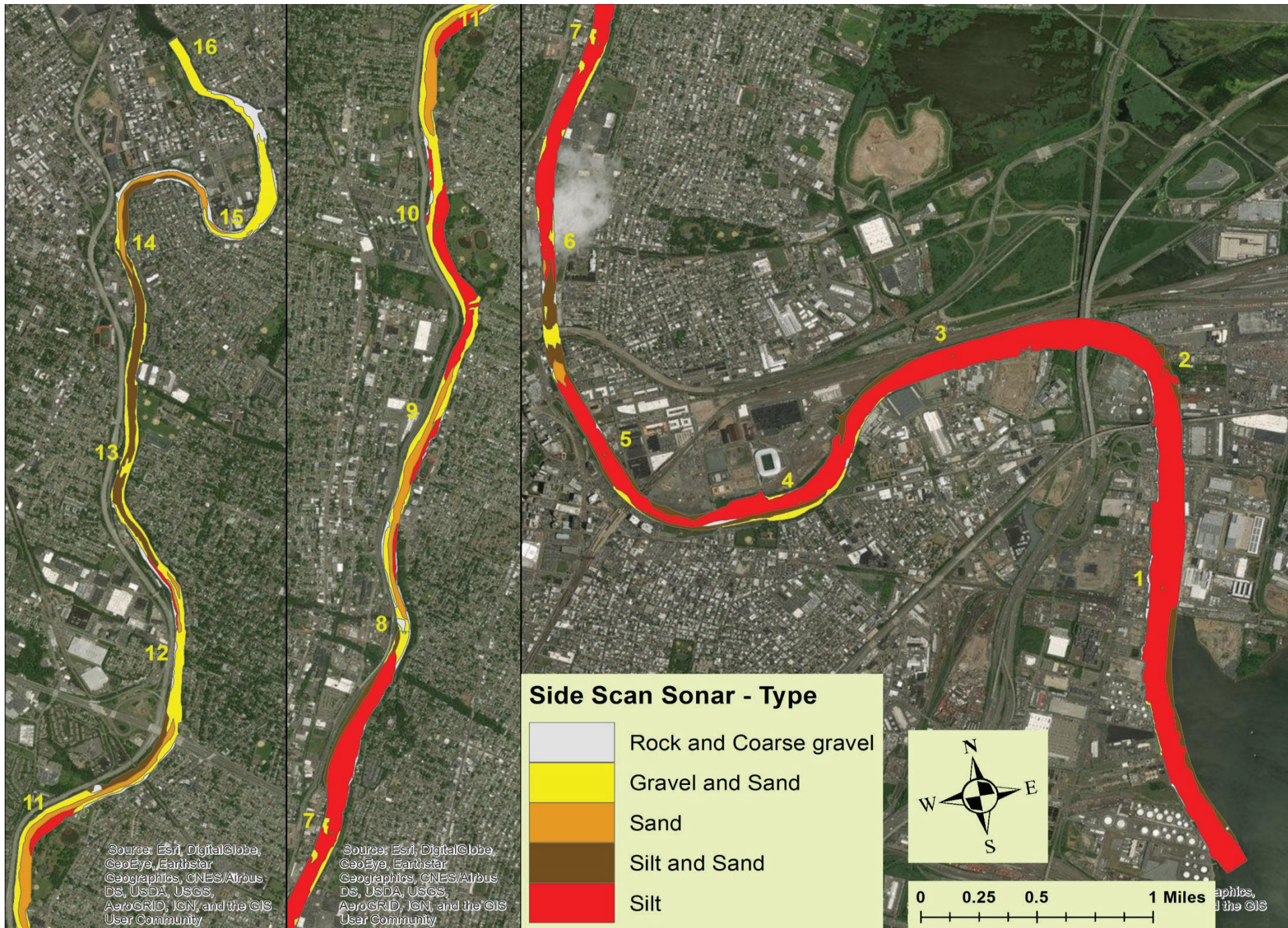


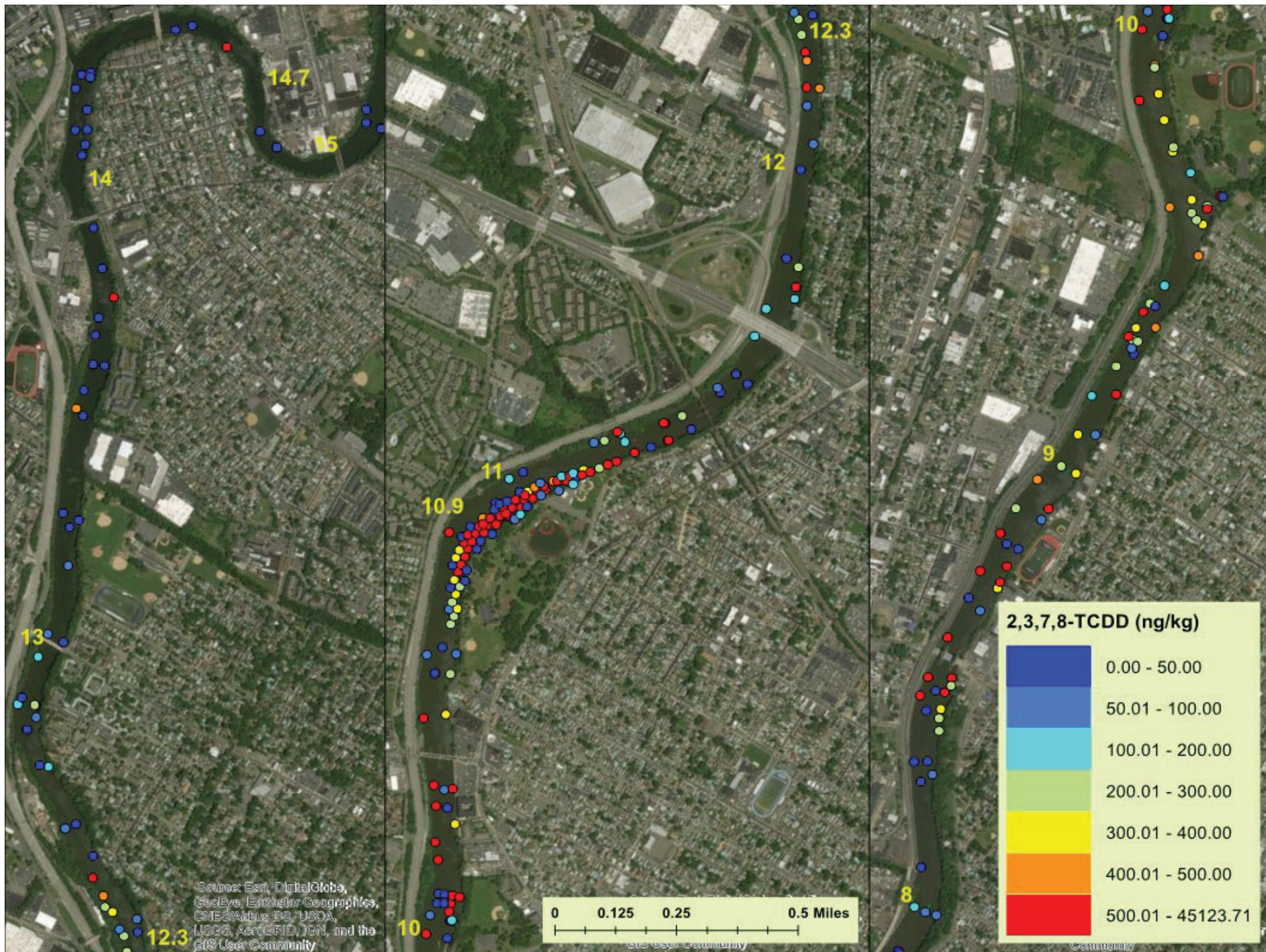
# Sediment Particle Sizes

A. Grain size		
"Gravel" > 2mm	Pebbles 4–64 mm	
	Granules 2–4 mm	
	Coarse sand 0.5–2 mm	
	Medium sand 0.25–0.5 mm	
	Fine sand 0.06–0.25 mm	
	Silt 0.004–0.06 mm	
	Clay < 0.004 mm	

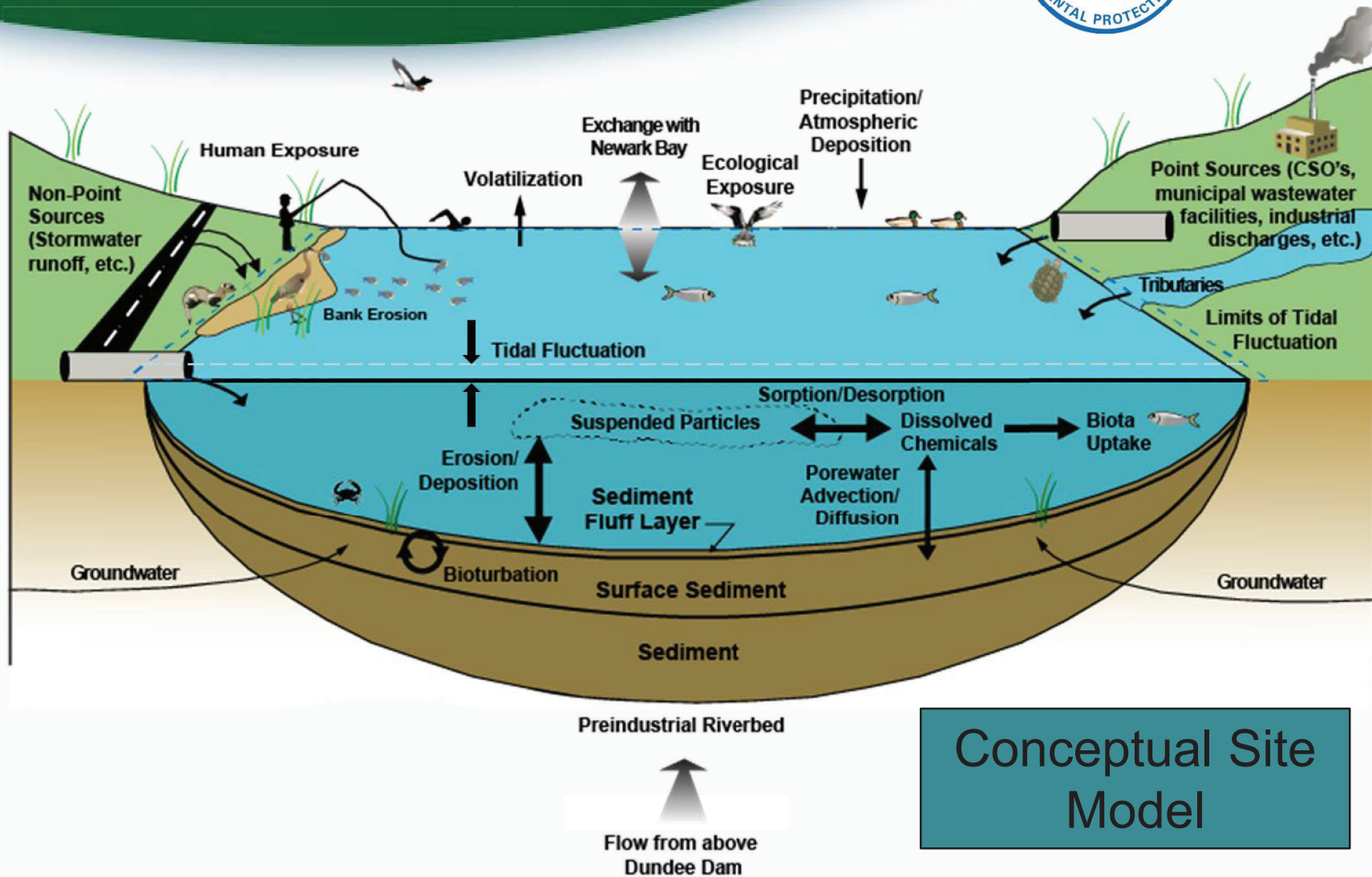
Coarse-Grained Sediment

Fine-Grained Sediment





Region 2 serving the people of New Jersey,  
New York, Puerto Rico and the U.S. Virgin Islands



Source: Modified from U.S. EPA - Contaminated Sediment Remediation Guidance for Hazardous Waste Sites, December 2005



# **INTERIM REMEDY POTENTIAL FOR THE UPPER 9 MILES**

**Michael Sivak**



## Rationale for Interim Remedy

- High degree of certainty
  - Sediment sources exist and limit system recovery
- Lower degree of certainty
  - Setting final risk-based sediment goals
  - Estimating time to reach final risk-based sediment goals
- Interim remedy offers opportunity to:
  - Remove source material and reduce risk sooner
  - Share infrastructure/resources of Lower 8.3-mile remedial action
  - Complete Lower 8.3-mile remedy and upper 9-mile interim remedy closer in time
  - Perform monitoring to capture benefit of both actions
- Commitment for final Record of Decision with risk-based goals



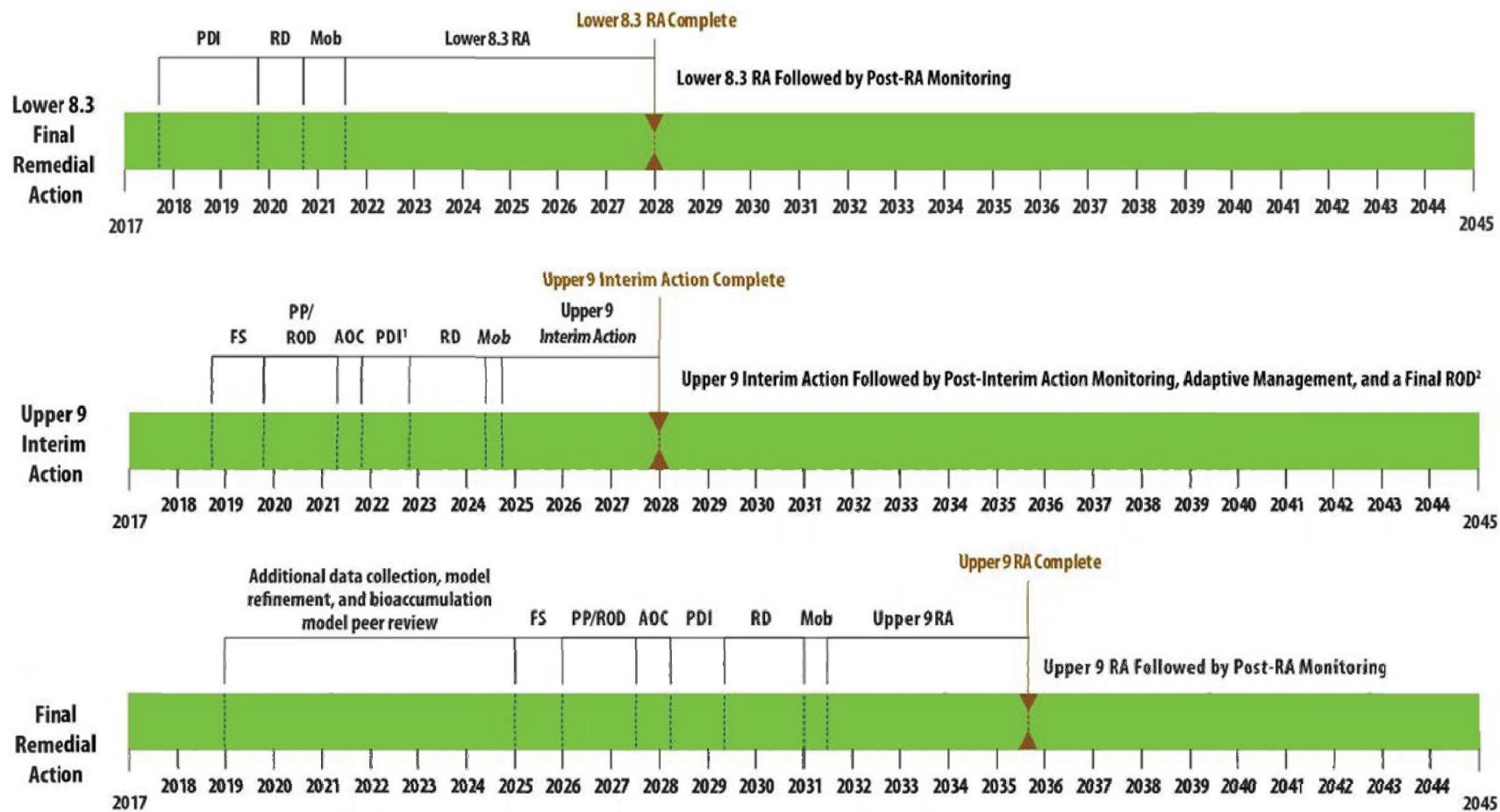
## Potential Interim Remedy

- Objective
  - Removal of most significant source areas of sediment contamination in upper 9 miles
- Anticipated outcomes
  - Reduced exposure
  - Reduced mobilization of contamination
  - Accelerated recovery in sediment and biota



## Overview of Potential Interim Remedy

- **Interim Remedy – Record of Decision 1**
  - Remove source material in the upper 9 miles
  - Conduct performance monitoring
    - Confirm removal of sources
    - Evaluate system recovery
    - Assess if acceptable risk levels will be achieved
- **Final Remedy – Record of Decision 2**
  - Establish cleanup goals
  - Monitor and compare to projections of recovery
    - Develop and implement additional remediation, if and as needed



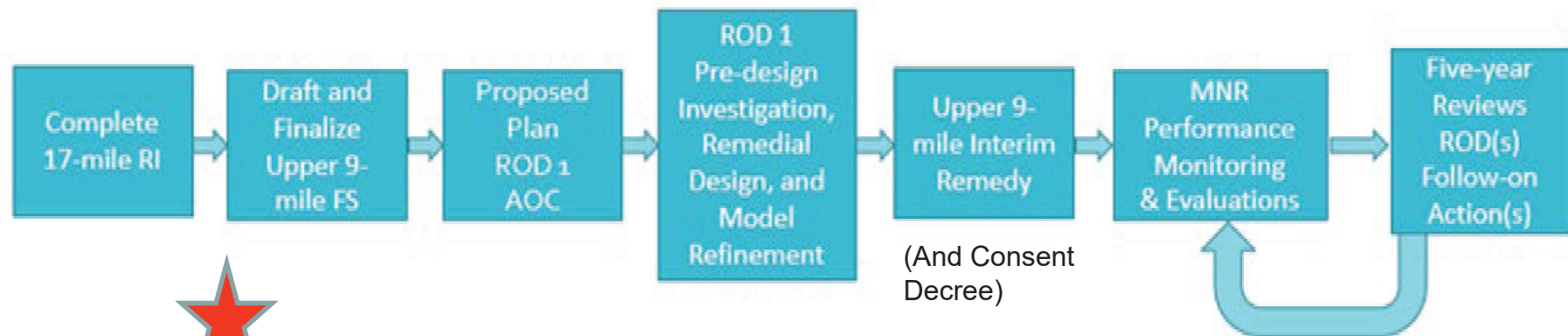
<sup>1</sup>Prior to the interim action PDI, baseline monitoring would also be implemented consistent with CSTAG recommendations.

<sup>2</sup>Adaptive management would include interim action performance assessment, model refinement, and modeling of recovery rates to facilitate derivation of risk-based goals and completion and implementation of the final ROD.



# Upper 9 Mile Interim Remedy

## Upper 9-mile Plan – An Adaptive & Iterative Approach



★  
17-mile RI is  
completed and have  
initiated proposed  
Interim Remedy FS



## Interim Remedy FS Meetings

- October 2018 to December 2018
  - Regular meetings (EPA, NJDEP and CPG) to resolve critical interim remedy FS inputs
- January 30 to March 2019
  - Continued regular meetings (EPA, NJDEP and CPG)
- March to August 2019
  - Regular meetings and/or conference calls to discuss progress on draft interim remedy FS; draft interim remedy FS was submitted in August 2019, under review
- September to November 2019
  - Regular meetings and/or conference calls (EPA, NJDEP and CPG) to resolve interim remedy FS comments
  - Meeting with EPA's sediment and remedy experts in November





## Current Condition Sampling

- Collecting Surface Water, Fish tissue and Sediment samples
- Began in summer 2019
- Assess current conditions in river
- Supports CPG's ongoing work and also will be used to compare to conditions after any remedial activities



# Outreach for the Potential Interim Remedy

- Bimonthly CAG meetings
  - Next one is November 14, 2019
  - Looking for meeting locations along upper 9 miles
- Public availability sessions
  - Open to public
  - Present information on the nature and extent of contamination, human health, and ecological risk assessments
  - First meeting was July 25, 2019, in Clifton, NJ
  - Second meeting is today

